Claims

What is claimed is:

1. A fluid compressor comprising a housing defining an internal bore and an outlet registering with the bore; at least one head mounted to the housing; a plurality of angularly spaced inlet valve assemblies disposed in the at least one head for permitting the flow of the fluid from the head into the bore and for preventing the flow of the fluid from the bore to the head; and at least one piston/valve unit mounted in the bore for reciprocal movement and adapted to move in one direction to draw the fluid through the valve assemblies, and into the bore; and to move in the opposite direction to compress the fluid and allow the compressed fluid to pass to the outlet.

2. The compressor of claim 1 wherein the valve assemblies are angularly spaced around the bore.

3. The compressor of claim 1 wherein the axis of each valve assembly extends at an angle to the longitudinal axis of the bore.

4. The compressor of claim 3 wherein the angle is approximately forty-five degrees.

5. The compressor of claim 3 wherein the angle is approximately ninety degrees.

6. The compressor of claim 1 wherein a plurality of angularly-spaced inlet chambers are formed in the at least one head and adapted to receive fluid

to be compressed, and wherein the inlet valve assemblies are mounted in the respective inlet chambers.

7. The compressor of claim 6 wherein the chambers are interconnected in the interior of the head permit the fluid to flow from chamber to chamber.

8. The compressor of claim 6 wherein the chambers and therefore the valve assemblies, are angularly spaced around the bore.

9. The compressor of claim 6 wherein the axis of each chamber, and therefore each valve assembly, extends at an angle to the longitudinal axis of the bore.

10. The compressor of claim 9 wherein the angle is approximately forty-five degrees.

11. The compressor of claim 9 wherein the angle is approximately ninety degrees.

12. The compressor of claim 1 wherein the compressed fluid flows through the piston/valve unit before passing to the outlet.

13. The compressor of claim 1 wherein there are two heads respectively mounted at the ends of the housing.

14. The compressor of claim 13 wherein there are two piston/valve units mounted for reciprocal movement in the bore.

15. The compressor of claim 14 wherein the piston/valve units are adapted to move in one direction whereby one piston/valve unit draws the fluid from the corresponding chambers, through its corresponding valve assemblies, and into the bore, and the other piston/valve unit compresses the fluid and allows it to pass to the outlet; and wherein the piston valve units are adapted to move in the other direction whereby the other piston/valve unit draws the fluid from its corresponding chambers, through its corresponding valve assemblies, and into the bore, and whereby the one piston/valve unit compresses the fluid and allows it to pass to the outlet.

16. The compressor of claim 14 further comprising a rod mounted for reciprocal movement in the bore and wherein the piston/valve units are attached to the rod.

17. The compressor of claim 1 wherein the valve assemblies are angularly spaced for 360 degrees around the bore.

18. The compressor of claim 17 wherein there are five valve assemblies equiangularly spaced around the bore.

19. A method of compressing fluid comprising angularly spacing a plurality of inlet valve assemblies around a bore, introducing fluid to be compressed to the valve assemblies, and reciprocating a piston unit in the bore to draw the fluid from the valve assemblies during movement of the piston unit in one direction and compress the fluid during movement of the piston unit in the other direction, the valve assemblies preventing fluid flow from the bore to the valve assemblies during the movement of the piston in the other direction.

20. The method of claim 19 wherein the valve assemblies are angularly spaced around the bore.

21. The method of claim 19 wherein the valve assemblies are angularly spaced for 360 degrees around the bore.

22. The method of claim 21 wherein there are five valve assemblies equiangularly spaced around the bore.

23. The method of claim 19 further comprising providing a head at one end of the bore, forming a plurality of angularly-spaced inlet chambers in the head, introducing the fluid into the chambers, and mounting the valve assemblies in the respective inlet chambers for receiving the fluid.

24. The method of claim 23 further comprising interconnecting the chambers to permit the fluid to flow from chamber to chamber.

25. The method of claim 19 wherein the compressed fluid flows through the piston unit and passes from the bore.

26. The method of claim 19 further comprising providing a head at each end of the bore, forming a plurality of angularly-spaced inlet chambers in each head, introducing the fluid into the chambers, and mounting the valve assemblies in the respective inlet chambers for receiving the fluid.

27. The method of claim 26 further comprising interconnecting the chambers in each head to permit the fluid to flow from chamber to chamber.

28. The method of claim 19 wherein the compressed fluid flows through the piston unit and passes from the bore.